

Claims

- [c1] 1. A feature rights management system, comprising:
a feature rights server having a repository for storing feature keys, the feature keys representing activation rights for features;
a feature rights management agent operatively coupled to the feature rights server to receive feature keys from the feature rights server, to store feature rights in a repository, and to identify available feature units provided; and
a sub-agent operatively coupled to the feature rights management agent to request feature rights from the feature rights management agent, wherein the feature rights management agent allocates the feature units among requesting sub-agents.
- [c2] 2. A feature rights management system according to claim 1,
wherein the feature rights management agents and the feature rights server transfer rights between the feature rights management agents and the server in the form of keys; and
wherein the sub-agents and the feature rights manage-

ment agent transfer rights between the sub-agents and the feature rights management agent in the form of permissions.

- [c3] 3. A feature rights management system according to claim 2,
wherein a connection between the feature rights management agents and the feature rights server is untrusted; and
wherein a connection between the sub-agents and the feature rights management agent is trusted.
- [c4] 4. A feature rights management system according to claim 2, wherein the sub-agent requests permissions for feature rights from the feature rights management agent upon provisioning.
- [c5] 5. A feature rights management system according to claim 4,
wherein the feature rights management agent comprises a memory for storing a number of unallocated feature units; and
wherein the feature rights management agent requests keys for features from the feature rights server when the number of unallocated feature units is deficient to meet the needs of a request for permissions by a sub-agent.

- [c6] 6. A feature rights management system according to claim 3,
wherein the sub-agent releases a feature unit by sending a release message to the feature rights management agent; and
wherein the feature rights management agent increases its number of available feature units in response to the release message.
- [c7] 7. A feature rights management system according to claim 3, wherein the feature management agent releases feature keys from a feature rights management agent and moves feature rights keys to the feature rights server.
- [c8] 8. A feature rights management system according to claim 1, wherein each feature key comprises a plurality of feature rights including a) feature units, b) a feature category, and c) a distribution node identifier.
- [c9] 9. A feature rights management system according to claim 9, wherein each feature unit designates how many instances of a feature category is permitted within a domain of a distribution node identified by the distribution node identifier.
- [c10] 10. A feature rights management system according to

claim 8, wherein the feature keys are of at least two kinds of keys: network keys destined to the feature rights server and element keys destined for the feature rights management agent.

[c11] 11. A method of managing feature rights, comprising the steps of:

- (a) storing feature keys in a feature rights server, the feature keys representing activation rights for features;
- (b) receiving feature keys in a feature rights management agent from the feature rights server;
- (c) storing the received feature keys in the agent to identify available feature; and
- (d) requesting in a sub-agent feature rights from the feature rights management agent.

[c12] 12. A method of managing feature rights according to claim 11, further comprising the step of

- (e) receiving in the sub-agent feature rights from the feature rights management agent in the form of permissions.

[c13] 13. A method of managing feature rights according to claim 12,
wherein said step (b) of receiving is over a un-trusted environment; and
wherein said step (e) of receiving permissions is over a

trusted environment.

[c14] 14. A method of managing feature rights according to claim 12,
wherein said step (d) of requesting requests permissions from the feature rights management agent for feature rights upon provisioning.

[c15] 15. A method of managing feature rights according to claim 12, further comprising the steps of:
(f) releasing a feature unit from the sub-agent by sending a release message to the feature rights management agent; and
(g) increasing a number of available feature units in the feature rights management agent in response said step (f).

[c16] 16. A method of managing feature rights according to claim 12, further comprising the step of
(f) moving feature rights keys from the feature management agent to the feature rights server to release feature keys from a feature rights management agent.

[c17] 17. A method of managing feature rights according to claim 11, wherein each feature key comprises a plurality of feature rights including a) feature units, b) a feature category, and c) a distribution node identifier.

- [c18] 18. A method of managing feature rights according to claim 17, wherein each feature unit designates how many instances of a feature category is permitted within a domain of a distribution node identified by the distribution node identifier.
- [c19] 19. A feature rights management apparatus capable of managing feature keys and permissions representing activation rights for features, comprising:
a feature rights management agent operatively coupled to a feature rights server to receive feature keys, to store feature rights in a repository, and to identify available feature units provided; and
a sub-agent operatively coupled to the feature rights management agent to request feature rights from the feature rights management agent, wherein the feature rights management agent allocates the feature units among requesting sub-agents.
- [c20] 20. A feature rights management apparatus according to claim 19,
wherein the feature rights management agent and the feature rights server transfer rights between themselves in the form of keys; and
wherein the sub-agents and the feature rights management agent transfer rights between themselves in the

form of permissions.

- [c21] 21. A feature rights management apparatus according to claim 20,
wherein a connection between the feature rights management agent and the feature rights server is untrusted; and
wherein a connection between the sub-agents and the feature rights management agent is trusted.
- [c22] 22. A feature rights management apparatus according to claim 20, wherein the sub-agent requests permissions for feature rights from the feature rights management agent upon provisioning.
- [c23] 23. A feature rights management system according to claim 22,
wherein the feature rights management agent comprises a memory for storing a number of unallocated feature units; and
wherein the feature rights management agent requests keys for features from the feature rights server when the number of unallocated feature units is deficient to meet the needs of a request for permissions by a sub-agent.
- [c24] 24. A feature rights management apparatus according to claim 20,

wherein the sub-agent releases a feature unit by sending a release message to the feature rights management agent; and

wherein the feature rights management agent increases its number of available feature units in response to the release message.

[c25] 25. A feature rights management apparatus according to claim 20, wherein the feature management agent re-releases feature keys from a feature rights management agent and moves feature rights keys to the feature rights server.

[c26] 26. A feature rights management apparatus according to claim 19, wherein each feature key comprises a plurality of feature rights including a) feature units, b) a feature category, and c) a distribution node identifier.

[c27] 27. A feature rights management apparatus according to claim 26, wherein each feature unit designates how many instances of a feature category is permitted within a domain of a distribution node identified by the distribution node identifier.

[c28] 28. A feature rights management apparatus according to claim 26,
wherein the feature keys are of at least two kinds of

keys: network keys destined to the feature rights server and element keys destined for the feature rights management agent;

wherein, the distribution node identifier of an element key identifies a domain of an identified feature rights management agent, and

wherein the distribution node identifier of a network key identifies a domain of an identified feature management server.

- [c29] 29. A feature rights management apparatus according to claim 19, further comprising a chassis housing the feature rights management agent and the sub-agents as cards.